

Application Serial No. 09/972,076

**LISTING OF THE CLAIMS**

1. (currently amended) A method for integrating the design of and the use of  
a decision service that returns ~~returning~~ a real-time decision in ASP mode to an end  
5 user, said method comprising:

a user linking to a first computer system having project design software via  
the Internet or a virtual private network and for using said project design software,  
designing any of or any combination of rules, models, and/or strategies, wherein said  
project design software further comprises capability for inserting a champion/challenger  
10 experiment for testing a new strategy;

when said user is satisfied with said any of or any combination of rules,  
models, and/or strategies, passing control to a code generator server and for generating  
strategy service software code for use in production in said ASP environment;

~~said code generator server generating strategy service software for~~  
15 ~~installation~~ installing said strategy service software on a decision server for executing  
said rules, models, and/or strategies;

an end user sending input data to said decision server via a Web server  
that delivers[[,]] said input data in ASP mode to ~~for processing using said decision~~  
server;

20 ~~said decision server processing said input data according to said installed~~  
any of or any combination of rules, models, and/or strategies and creating  
corresponding output data;

~~said decision server returning said created output data to said Web server~~  
in XML format; and

25 ~~said Web server returning said output data~~ to said end user.

2. (original) The method of Claim 1, further comprising:  
using system integration and consulting services, said consulting services  
for developing and refining rules, models, and strategies.

30 3. (original) The method of Claim 1, wherein said generated code is in C.

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4. (original) The method of Claim 1, wherein said decision server is linked to external data resources for extracting additional relevant data.
- 5 5. (original) The method of Claim 1, wherein said input data is in XML format and wherein an ASP file running on said Web server passes said data to said decision server.
6. (original) The method of Claim 1, further comprising:  
10 said code generator server generating an XML schema for providing to a client system for collecting said input data ; and  
said code generator server generating an XML parser/builder for reading data conforming to said XML schema.
- 15 7. (original) The method of Claim 6, further comprising:  
providing a copy of said XML schema to said Web server for using in any of error handling, data validation, and data verification.
8. (original) The method of Claim 1, further comprising:  
20 said code generator server generating a Web page for installing on said Web server to facilitate communication in ASP mode between a client system and said decision server.
9. (currently amended) An apparatus for integrating the design of and the  
25 use of a decision service that returns ~~returning~~ a real-time decision in ASP mode to an end user, said apparatus comprising:  
means for a user linking to a first computer system having project design software via the Internet or a virtual private network and for using said project design software, designing any of or any combination of rules, models, and/or strategies,  
30 wherein said project design software further comprises capability for inserting a champion/challenger experiment for testing a new strategy;

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when said user is satisfied with said any of or any combination of rules, models, and/or strategies, means for passing control to a code generator server and for generating strategy service software code for use in production in said ASP environment;

- 5            means for ~~said code generator server generating strategy service software for installation~~ installing said strategy service software on a decision server for executing said rules, models, and/or strategies;

             means for an end user sending input data to said decision server via a Web server that delivers[[,]] said input data in ASP mode to ~~for processing using said~~  
10    decision server;

             means for said decision server processing said input data according to said installed any of or any combination of rules, models, and/or strategies and means for creating corresponding output data;

             means for said decision server returning said created output data to said  
15    Web server in XML format; and

             means for said Web server returning said output data to said end user.

10.            (original) The apparatus of Claim 9, further comprising:

             means for using system integration and consulting services, said  
20    consulting services for developing and refining rules, models, and strategies.

11.            (original) The apparatus of Claim 9, wherein said generated code is in C.

12.            (original) The apparatus of Claim 9, wherein said decision server is linked  
25    to external data resources for extracting additional relevant data.

13.            (original) The apparatus of Claim 9, wherein said input data is in XML format and wherein an ASP file running on said Web server passes said data to said decision server.

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14.            (original) The apparatus of Claim 9, further comprising:

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means for said code generator server generating an XML schema for providing to a client system for collecting said input data ; and

means for said code generator server generating an XML parser/builder for reading data conforming to said XML schema.

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15. (original) The apparatus of Claim 14, further comprising:

means for providing a copy of said XML schema to said Web server for using in any of error handling, data validation, and data verification.

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16. (original) The apparatus of Claim 9, further comprising:

means for said code generator server generating a Web page for installing on said Web server to facilitate communication in ASP mode between a client system and said decision server.

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17. (currently amended) A method for [[a]] assembling and delivering a decision engine in ASP mode, said method comprising:

defining input and output structures in XML and/or CGI format;

importing analytical models and/or strategies;

adding rules, modifying decision actions, and general tweaking of said

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engine;

testing said engine, wherein said testing further comprises capability for inserting a champion/challenger experiment for testing a new strategy;

fueling said engine with data from a variety of sources; and

said engine delivering decisions.

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18. (previously amended) A method for an end user to develop rules, models, and/or strategies, for generating real time decisions in ASP mode, said method comprising:

using predictive and/or descriptive analytics for outputting a models file of

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resulting rules by taking historical data as input;

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providing a designer component, said designer component providing means for designing rules, models, and strategies by using a project design, wherein said project design further comprises capability for inserting a champion/challenger experiment for testing a new strategy;

5 storing said project design in a projects repository for future reference;  
generating a runtime version of said project design for testing, said testing thereby validating and verifying said rules;

stress testing said rules, models, and/or strategies by inputting a significantly large number of transactions into a monitor and Web server;

10 said Web server generating a bulk test report representing results of said stress testing;

modifying said rules, models, and strategies, if necessary as a result of said stress testing; and

generating production code for executing in production mode.

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19. (original) The method of Claim 18, wherein said predictive and/or descriptive analytics is either proprietary.

20. (original) The method of Claim 18, further comprising:

20 providing a model editor component for automatically converting said models file into an XML version of said rules; and

importing said converted XML data into said designer component.

21. (original) The method of Claim 18, said designer component further  
25 comprising

providing designing software having graphical user interfaces for generating data, variables, rules, models, strategies, trees, and actions required in said project design.

30 22. (original) The method of Claim 18, further comprising:

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providing a test service whereby said rules are tested in runtime mode, said test service comprising a wrapper for a control panel and for an Excel testing program.

- 5 23. (original) The method of Claim 18, further comprising:  
said stress testing tracking statistics on specific rules, models, and/or strategies by counting the number of times predetermined rules, models, and/or strategies are used during said stress testing.
- 10 24. (original) The method of Claim 23, further comprising:  
storing said tracked statistics in a statistics repository.
25. (original) The method of Claim 18, wherein said production code is in C.
- 15 26. (previously amended) An apparatus for an end user to develop rules, models, and/or strategies for generating real time decisions in ASP mode, said apparatus comprising:  
predictive and/or descriptive analytics for outputting a models file of resulting rules by taking historical data as input;
- 20 a designer component, said designer component providing means for designing rules, models, and strategies by using a project design, wherein said project design further comprises capability for inserting a champion/challenger experiment for testing a new strategy;
- a projects repository for storing said project design for future reference;
- 25 a generated runtime version of said project design for testing, thereby to validate and verify said rules;
- means for stress testing said rules, models, and/or strategies by inputting a significantly large number of transactions into a monitor and Web server;
- a bulk test report generated on said Web server, said bulk test report
- 30 representing results of said stress testing;

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means for modifying said rules, models, and strategies, if necessary as a result of said stress testing; and  
production code for executing in production mode.

5 27. (original) The apparatus of Claim 26, wherein said predictive and/or descriptive analytics is either proprietary.

28. (original) The apparatus of Claim 26, further comprising:  
a model editor component for automatically converting said models file  
10 into an XML version of said rules; and  
means for importing said converted XML data into said designer component.

29. (original) The apparatus of Claim 26, said designer component further  
15 comprising  
designing software having graphical user interfaces for generating data, variables, rules, models, strategies, trees, and actions required in said project design.

30. (original) The apparatus of Claim 26, further comprising:  
20 a test service for testing said rules in runtime mode, said test service comprising a wrapper for a control panel and for an Excel testing program.

31. (original) The apparatus of Claim 26, further comprising:  
means for said stress testing to track statistics on specific rules, models,  
25 and/or strategies by counting the number of times predetermined rules, models, and/or strategies are used during said stress testing.

32. (previously amended) The apparatus of Claim 26, further comprising:  
a statistics repository for storing said tracked statistics.

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33. (previously amended) The apparatus of Claim 26, wherein said production code is C format.

34. (previously amended) An apparatus in an ASP environment for automating real time decisions, said apparatus comprising:

a data center accessible over the Internet;  
an all-purpose decision engine resident on said data center;  
means for configuring, testing, and deploying said all-purpose decision engine; and

10 means for champion/challenger testing in a strategy design cycle;  
wherein said configured decision engine is embeddable in a business software application.

35. (original) The apparatus of Claim 34, further comprising:  
15 at least one model.

36. (original) The apparatus of Claim 34, further comprising:  
systems integration and strategy consulting.

20 37. (previously amended) The apparatus of Claim 34, further comprising domain expert contributions from at least one domain expert, said at least one domain expert comprising any of:

a client;  
a partner; and  
25 a consultant.

38. (previously amended) The apparatus of Claim 35, wherein said at least one model is any combination of:

expert;  
30 judgment;  
pooled;



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custom predictive; and

decision;

wherein said at least one model predicts any combination of risk, revenue, response, and attrition.

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39. (previously amended) The apparatus of Claim 34, said means for configuring, testing, and deploying further comprising adaptability for a variety of end user categories, comprising any of:

vertical markets and functional areas within said vertical markets;

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horizontal markets and functional areas within said horizontal markets;

operation managers of Fortune 1000 companies; and

training consultants and software integrators.

40. (original) The apparatus of Claim 34, said means for configuring, testing, and deploying further comprising:

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means for building a special purpose decision application having a user interface customized to a particular purpose.

41. (original) The apparatus of Claim 40, wherein said particular purpose is business.

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42. (original) The apparatus of Claim 34, further comprising:

open and industry standard software architecture on said data center for software compatibility.

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43. (original) The apparatus of Claim 42, wherein said open and industry standard software architecture follows Extensible Markup Language (XML) standards for Internet communications.

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44. (original) The apparatus of Claim 34, further comprising:

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an additional layer of coordinating software for linking said decision engine to netsourced and/or external data.

45. (original) The apparatus of Claim 34, further comprising:

5 a transaction log of said automated real time decisions, said log accessible by a client.

46. (currently amended) The apparatus of Claim 34, further comprising:

10 means for integrating said decision engine into an enterprise workflow;  
wherein said decisions comprise any combination of, ~~but are not limited to:~~  
scores;  
reason codes;  
actions; and  
other calculated results.

15 47. (original) The apparatus of Claim 34, further comprising:

a decision process template for facilitating easy assembly of a basic design of said decision engine.

20 48. (canceled)

49. (original) The apparatus of Claim 34, further comprising:

automatic means for importing predefined models and/or strategies by an end user into said configured decision engine.

25 50. (original) The apparatus of Claim 34, further comprising:

a visual designer component for facilitating said configuring said decision engine;

30 a Web-based reporting facility component for design time configuration  
and run-time testing results; and

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a run-time server for run-time execution of said configured decision engine wherein said server is linked to from a requesting system via a Web-server.

51. (original) The apparatus of Claim 50, further comprising:

5 means for using said visual designer component to create a project resident at said data center;

means for said data center generating associated code for said project and install said associated code on said run-time server;

10 means for said data center generating an XML schema corresponding to said project to define input and output structures for said business application; and

means for said run-time server accepting transactions from said business application, said transactions conforming to said XML schema, said run-time server processing said transactions using said project to generate said real time decisions, and said run-time server returning said real time decisions to said business application via  
15 said Web-server.

52. (original) The apparatus of Claim 34, further comprising:

user defined rules to be executed by said decision engine.

20 53. (previously amended) The apparatus of Claim 51, said project having a project design and associated design parts, said design parts comprising any of:

input and output data structures;

characteristic generations;

25 models comprising characteristics and attributes to produce a predictive score and a score reason at runtime for a given transaction, and user defined functions;

a reason codes corresponding to said score reason;

business rules and exclusions;

decision strategies; and

recommended decisions, scores, and actions;

30 wherein said project design is carried out by a workflow functional component of said designer component by working with said project design parts;

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wherein said workflow functional component comprises:

expression sequences;

segmentation trees;

workflow lists;

5 means for placing said sequences, trees, and lists in a desired order, said order comprising a hierarchical design;

a root workflow list providing a starting point for processing said workflow at runtime and means for defining said workflow of said project; and

10 wherein said reason codes are determined during calculation of said scores.

54. (original) The apparatus of Claim 53, wherein said root workflow list represents a main thread of execution for said project at runtime, wherein any of said workflow lists is used as a result list at an exit point of a segmentation tree of said segmentation trees, and wherein end result nodes in said segmentation tree points to  
15 said workflow list.

55. (previously amended) The apparatus of Claim 54, wherein more than one node in any of: said segmentation tree and said more than one segmentation tree, in  
20 said project points to a same workflow list of said workflow lists.

56. (previously amended) The apparatus of Claim 53, further comprising means for validating said models, wherein said means for validating comprises:  
using a model editor for validating and verifying content of said models;  
25 and  
marking said project for production or testing.

57. (currently amended) A method in an ASP environment for automating real time decisions, said method comprising:  
30 providing a data center accessible over the Internet;  
providing an all-purpose decision engine resident on said data center;

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configuring, testing, and deploying said all-purpose decision engine; and  
champion/challenger testing in a strategy design cycle;  
wherein said configured decision engine is embeddable in a business  
software application.

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58. (original) The method of Claim 57, further comprising:  
providing at least one model.

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59. (original) The method of Claim 57, further comprising:  
providing systems integration and strategy consulting.

60. (previously amended) The method of Claim 57, further comprising  
providing domain expert contributions from at least one domain expert, said at least one  
domain expert comprising any of:

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a client;  
a partner; and  
a consultant.

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61. (previously amended) The method of Claim 58, wherein said at least one  
model is any combination of:

expert;  
judgment;  
pooled;  
custom predictive; and

25

decision;

wherein said at least one model predicts any combination of risk, revenue,  
response, and attrition.

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62. (previously amended) The method of Claim 57, wherein said configuring,  
testing, and deploying further comprises adaptability for a variety of end user  
categories, comprising any of:

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vertical markets and functional areas within said vertical markets;  
horizontal markets and functional areas within said horizontal markets;  
operation managers of Fortune 1000 companies; and  
training consultants and software integrators.

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63. (original) The method of Claim 57, said configuring, testing, and deploying further comprising:

building a special purpose decision application having a user interface customized to a particular purpose.

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64. (original) The method of Claim 63, wherein said particular purpose is business.

65. (original) The method of Claim 57, further comprising:

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providing open and industry standard software architecture on said data center for software compatibility.

66. (original) The method of Claim 65, wherein said open and industry standard software architecture follows Extensible Markup Language (XML) standards for Internet communications.

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67. (original) The method of Claim 57, further comprising:

providing an additional layer of coordinating software for linking said decision engine to netsourced and/or external data.

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68. (original) The method of Claim 57, further comprising:

providing a transaction log of said automated real time decisions, said log accessible by a client.

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69. (currently amended) The method of Claim 57, further comprising:  
integrating said decision engine into an enterprise workflow;

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wherein said decisions comprise any combination of, ~~but are not limited to:~~

scores;

reason codes;

actions; and

other calculated results.

70. (original) The method of Claim 57, further comprising:  
providing a decision process template for facilitating easy assembly of a  
basic design of said decision engine.

71. (canceled)

72. (original) The method of Claim 57, further comprising:  
automatic importing predefined models and/or strategies by an end user  
into said configured decision engine.

73. (original) The method of Claim 57, further comprising:  
providing a visual designer component for facilitating said configuring said  
decision engine;

providing a Web-based reporting facility component for design time  
configuration and run-time testing results; and

providing a run-time server for run-time execution of said configured  
decision engine wherein said server is linked to from a requesting system via a Web-  
server.

74. (original) The method of Claim 73, further comprising:  
using said visual designer component to create a project resident at said  
data center;

said data center generating associated code for said project and install  
said associated code on said run-time server;

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said data center generating an XML schema corresponding to said project to define input and output structures for said business application; and

said run-time server accepting transactions from said business application, said transactions conforming to said XML schema, said run-time server  
5 processing said transactions using said project to generate said real time decisions, and  
said run-time server returning said real time decisions to said business application via  
said Web-server.

75. (original) The method of Claim 57, further comprising:  
10 providing user defined rules to be executed by said decision engine.

76. (previously amended) The method of Claim 74, wherein said project  
comprises a project design and associated design parts, said design parts comprising  
any of:  
15 input and output data structures;  
characteristic generations;  
models comprising characteristics and attributes to produce a predictive  
score and a score reason at runtime for a given transaction, and user defined functions;  
a reason codes corresponding to said score reason;  
20 business rules and exclusions;  
decision strategies; and  
recommended decisions, scores, and actions;  
wherein said project design carried out by a workflow functional  
component of said designer component by working with said project design parts;  
25 wherein said workflow functional component comprises:  
expression sequences;  
segmentation trees;  
workflow lists;  
means for placing said sequences, trees, and lists in a desired  
30 order, said order comprising a hierarchical design;



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a root workflow list providing a starting point for processing said workflow at runtime and means for defining said workflow of said project; and wherein said reason codes are determined during calculation of said scores.

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77. (original) The method of Claim 76, wherein said root workflow list represents a main thread of execution for said project at runtime, wherein any of said workflow lists is used as a result list at an exit point of a segmentation tree of said segmentation trees, and wherein end result nodes in said segmentation tree points to said workflow list.

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78. (previously amended) The method of Claim 77, wherein more than one node in any of said segmentation tree and said more than one segmentation tree, in said project points to a same workflow list of said workflow lists.

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79. (previously amended) The method of Claim 76, further comprising validating said models, wherein said validating comprises:

using a model editor for validating and verifying content of said models;

and

marking said project for production or testing.

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